

## Pola produksi dan laju dekomposisi daun rhizophora mucronata di Hutan Taman Wisata Teluk Yotefa Kotamadya Jayapura - Papua

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### Abstrak

Yotefa Bay, lying on the north coast of Jayapura, was established as a Tourist Park in 1978, based on the Minister of Agriculture's Decree No.: 372/Kpts/Um/6/1978 dated 9<sup>th</sup> June 1978, Mangrove forest, which spreads out from the north part to southeast part of Yotefa Bay, is dominated by Rhizophora spp. Research on pattern of litter production of Rhizophora mucronata in Yotefa Bay Tourist Park, Jayapura-Papua, was conducted from June - September 1999. This research was experimental research using vegetation analysis transect method, and the data analysis to know the community structure was conducted using quantitative parameters, i.e.: diameter at breast high (dbh); density and basal area. Litterfall was collected according to the methods describes by Brown (1984), using a spesilic litter traps- All materials acumulated in the traps were collected once per week during the sampling period. Estimated of litterfall rates were using the formulas by Chansang and Poovachiranon (1990), and estimated of production of litterfall using the statistical porcedures by Walpole (1985).

The results showed that total of R. mucronata litter production ranged between 18.8120 tons ha<sup>-1</sup>year<sup>-1</sup> to 78.84 tons ha<sup>-1</sup>year<sup>-1</sup>. The largest component of litter obtained was leaves: 52.04%, followed by component of fruits 34.34%, flowers 9.91% and skin-branches 3.78% respectively. There is not a tendency that pattern of leave litter production in the mangrove forest in Yotefa Bay follows rainfall fluctuation, and did not tend to be greater during rainy season. It is necessary to conduct similar research in other mangrove forest of Yotefa Bay Tourist Park. It is hoped that in th next research, besides the use of more spesific supporting parameters, the location for observation will be wider, with many more litter traps and longer time for observation. Research on decomposition rate of R. mucronata leave litter was conducted in 16 weeks, starting from June to September 1999.

This research was also a factorial experiment with two factors. Data was analyzed using ANOVA with two-way classification in order to know whether the time-length of soaking and immersion, and the location of decomposition have any influence on the rate of decomposition. Analysis was also done to determine the rate of decomposition value (k value). Chemical analysis was done in the laboratory to know the content of Carbon, Nitrogen, Phosphor and Potassium elements in the leave litter of the R. rnucronafa of the decomposition remnants.

The results showed that decomposition rate of leave litter of R. mucronata was influenced by the time-length of soaking and immersion and the decomposition location. The rate of decomposition value (k value) average was 1.19; this value showed that decomposition worked well. Average contents of element of Carbon, Nitrogen, Phosphor and Potassium were respectively 14,135, 1,27%, O,100% and O,212%. The existence of those elements in the decomposed mangrove leave litter has effected the rate of decomposition

value. It is necessary to conduct a similar research in the other part of mangrove forest in the Yotefa Bay Tourist Park, Jayapura. It is expected that the next research will be focused more on microorganism activities (fungi and bacteria) and the influence of other abiotic factors, which have not been done in this research, in order to know the influence of those factors on the rate of decomposition.